Release notes for ENDF/B Development e-091_Pa_000 evaluation

October 13, 2016

- `fudge-4.0` Warnings:

  1. Mislabled emitted particle
     Reading ENDF file: ../e-091_Pa_000.endf (Error # 0): ZAP messed up

     `WARNING: photon most likely labelled as an electron (ZAP = 11), converting to ZAP = 0`

  2. FIXME: Generic fudge unimplemented message
     reaction label 1: e- + Pa + gamma [bremsstrahlung] / Product: e- (Error # 0): Generic unimp (c)

     `WARNING: Checking not yet implemented for energyLoss type data`

  3. FIXME: Generic fudge unimplemented message
     reaction label 2: e- + Pa [excitation] / Product: e- (Error # 0): Generic unimp (c)

     `WARNING: Checking not yet implemented for energyLoss type data`

- `fudge-4.0` Errors:

  1. Calculated and tabulated thresholds don't agree
     reaction label 0: e- + Pa [large angle Coulomb scattering] / Cross section: (Error # 0): Threshold mismatch

     `WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 10. eV!`

  2. Calculated and tabulated thresholds don't agree
     reaction label 1: e- + Pa + gamma [bremsstrahlung] / Cross section: (Error # 0): Threshold mismatch

     `WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 10. eV!`

  3. Calculated and tabulated thresholds don't agree
     reaction label 2: e- + Pa [excitation] / Cross section: (Error # 0): Threshold mismatch

     `WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 10. eV!`

  4. Calculated and tabulated thresholds don't agree
     reaction label 3: e- + e- + Pa1s1/2 / Cross section: (Error # 0): Threshold mismatch

     `WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 113080. eV!`

  5. Calculated and tabulated thresholds don't agree
     reaction label 4: e- + e- + Pa2s1/2 / Cross section: (Error # 0): Threshold mismatch

     `WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 21113. eV!`

  6. Calculated and tabulated thresholds don't agree
     reaction label 5: e- + e- + Pa2p1/2 / Cross section: (Error # 0): Threshold mismatch

     `WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 20402. eV!`

  7. Calculated and tabulated thresholds don't agree
     reaction label 6: e- + e- + Pa2p3/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 16743. eV!
```

8. Calculated and tabulated thresholds don't agree
   reaction label 7: e- + e- + Pa3s1/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 5334.9 eV!
```

9. Calculated and tabulated thresholds don't agree
   reaction label 8: e- + e- + Pa3p1/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 5001.8 eV!
```

10. Calculated and tabulated thresholds don't agree
    reaction label 9: e- + e- + Pa3p3/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 4159.4 eV!
```

11. Calculated and tabulated thresholds don't agree
    reaction label 10: e- + e- + Pa3d3/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 3616.1 eV!
```

12. Calculated and tabulated thresholds don't agree
    reaction label 11: e- + e- + Pa3d5/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 3443.6 eV!
```

13. Calculated and tabulated thresholds don't agree
    reaction label 12: e- + e- + Pa4s1/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 1362.1 eV!
```

14. Calculated and tabulated thresholds don't agree
    reaction label 13: e- + e- + Pa4p1/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 1210.1 eV!
```

15. Calculated and tabulated thresholds don't agree
    reaction label 14: e- + e- + Pa4p3/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 990.5700000000001 eV!
```

16. Calculated and tabulated thresholds don't agree
    reaction label 15: e- + e- + Pa4d3/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 743.75 eV!
```

17. Calculated and tabulated thresholds don't agree
    reaction label 16: e- + e- + Pa4d5/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 703.21 eV!
```

18. Calculated and tabulated thresholds don't agree
    reaction label 17: e- + e- + Pa4f5/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 377.63 eV!
```

19. Calculated and tabulated thresholds don't agree
    reaction label 18: e- + e- + Pa4f7/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 367.04 eV!
    ```

20. Calculated and tabulated thresholds don't agree
    reaction label 19: e- + e- + Pa5s1/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 305.17 eV!
    ```

21. Calculated and tabulated thresholds don't agree
    reaction label 20: e- + e- + Pa5p1/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 245.89 eV!
    ```

22. Calculated and tabulated thresholds don't agree
    reaction label 21: e- + e- + Pa5p3/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 194.07 eV!
    ```

23. Calculated and tabulated thresholds don't agree
    reaction label 22: e- + e- + Pa5d3/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 106.08 eV!
    ```

24. Calculated and tabulated thresholds don't agree
    reaction label 23: e- + e- + Pa5d5/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 98.40000000000001 eV!
    ```

25. Calculated and tabulated thresholds don't agree
    reaction label 24: e- + e- + Pa5f5/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 7.64 eV!
    ```

26. Calculated and tabulated thresholds don't agree
    reaction label 25: e- + e- + Pa5f7/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 6.8 eV!
    ```

27. Calculated and tabulated thresholds don't agree
    reaction label 26: e- + e- + Pa6s1/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 50.01 eV!
    ```

28. Calculated and tabulated thresholds don't agree
    reaction label 27: e- + e- + Pa6p1/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 32.61 eV!
    ```

29. Calculated and tabulated thresholds don't agree
    reaction label 28: e- + e- + Pa6p3/2 / Cross section: (Error # 0): Threshold mismatch

    ```
    WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 23.82 eV!
    ```

30. Calculated and tabulated thresholds don't agree
reaction label 29: e- + e- + Pa6d3/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 4.71 eV!
```

31. Calculated and tabulated thresholds don't agree
reaction label 30: e- + e- + Pa6d5/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 4.13 eV!
```

32. Calculated and tabulated thresholds don't agree
reaction label 31: e- + e- + Pa7s1/2 / Cross section: (Error # 0): Threshold mismatch

```
WARNING: Calculated and tabulated thresholds disagree: 1.e-5 eV vs 5.67 eV!
```

- `xsectplotter` Warnings:

  1. Mislabled emitted particle
     Error: ZAP messed up

     ```
     stderr while processing crossSection

         WARNING: photon most likely labelled as an electron (ZAP = 11), converting to ZAP = 0
     ... [4 more lines]
     ```